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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,953	01/26/2004	Yongqin Chen	CHEN 1-18	9306

7590 12/08/2005

Docket Administrator (Rm. 3C-512)
Lucent Technologies Inc.
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EXAMINER	
VAN ROY, TOD THOMAS	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/764,953	CHEN ET AL.	
	Examiner	Art Unit	
	Tod T. Van Roy	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20 and 24-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20 and 24-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Ventrudo et al. (US 5589684).

With respect to claim 24, Ventrudo discloses a method of reducing noise in an optical system by distributing power between modes comprising the steps of: providing an optical transmission path (fig.1 fiber), providing an external cavity fiber grating laser optically coupled to the transmission path (fig.1, col.7 lines 8-14), causing the laser to laser simultaneously at two or more modes to partition the optical power over the two or more modes such that as the grating wavelength changes there is a gradual shift in the distribution of the optical power between the two or more modes (col.7 lines 22-33).

With respect to claim 25, Ventrudo further discloses the external cavity fiber grating laser comprises an external cavity fiber Bragg grating laser (col.5 line 60).

With respect to claim 26, Ventrudo further discloses the optical transmission path to comprise a single mode or multimode optical transmission path (fig.1 fiber, inherent that the optical fiber would either be single or multimode).

With respect to claim 27, Ventrudo discloses a method to emit two or more co-existing modes in an optical system to reduce noise by mode hopping comprising the

steps of: providing an external cavity grating laser (fig.1, col.7 lines 8-14), causing the laser to lase simultaneously in two or more modes such that the net transmitted optical power is distributed amongst the two or more modes (col.7 lines 18-21, inherent that the output power would distribute between the modes), and modulating the laser to transmit information by the two or more modes (col.1 lines 27-30, teaching the incorporation of these systems into modulated communication devices, which would necessitate the modulation of the gain medium) to reduce noise by mode hopping (col.2 lines 53-56, col.7 lines 18-21).

Claims 28 and 29 are rejected for the reasons outlined in the rejections of claims 25 and 26.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ventrudo in view of Verdiell et al. (US 5870417).

With respect to claim 20, Ventrudo teaches a providing an optical laser which includes a gain medium (fig.1 back facet of LD #11 to grating #24) having a reflective face (col.4 lines 60-62), and further includes an external cavity effectively terminated by a grating having a bandwidth (col.7 lines 18-21), providing an optical fiber (fig.1), operating the optical laser such that laser radiation is produced in at least two within the grating bandwidth (col.7 lines 13-14), through the use of a light-expanding region (fig.1 #13, 14, divergent light expansion from device), coupling light between the gain medium and the external cavity such that substantially all optical resonance that occurs is resonance of the cavity defined between said reflective face and said grating (col.7 lines 8-14), applying a modulation signal to the optical laser to produce modulated light (col.1 lines 27-30, teaching the incorporation of these systems into modulated communication devices, which would necessitate the modulation of the gain medium), launching the modulated light into the optical fiber (fig.1). Ventrudo does not teach the use of an AR coating on the gain medium facet. Verdiell teaches an external cavity grating coupled device that uses an AR coating on its facet (abs.). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser device of Ventrudo with the coating of Verdiell in order to enhance the amount of coupling between the laser diode and the grating (Verdiell, col.2 lines 54-58).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR